

Date: Fri, 24 Jun 94 04:30:45 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #172
To: Ham-Homebrew

Ham-Homebrew Digest Fri, 24 Jun 94 Volume 94 : Issue 172

Today's Topics:

 JDR Microdevices
 L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ
 new HAMCOM interface with optical isolation

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 23 Jun 94 20:33:28 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!europa.eng.gtefsd.com!
newsxfer.itd.umich.edu!zip.eecs.umich.edu!yeshua.marcam.com!news.kei.com!ub!
galileo.cc.rochester.edu!news@network.ucsd.
Subject: JDR Microdevices
To: ham-homebrew@ucsd.edu

Has anyone else noticed that JDR seems to have picked up lots of neat lines? I
was just flipping through their electronic components catalog and they've got
about 6 pages of kits, including a 2m xcvr for \$150. Case is extra (like I
want a naked board...).

They've also got a pretty good selection of IC's including the MC1350 IF amp
and the NE602... visible laser diode... cases...

Phone is 408-494-1400.

I don't work for them and I don't advertise for them. I DEFINITELY don't vouch
for them. Just thought y'all might be interested...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu

My opinions. No one in their right mind would claim otherwise.

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In nature, stupidity gets you killed.

In the workplace, it gets you fired.

In politics, it gets you re-elected.

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Date: Wed, 22 Jun 1994 11:51:15 -0500
From: psinntp!pbs.org!jernandez.pbs.org!user@uunet.uu.net
Subject: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ
To: ham-homebrew@ucsd.edu

In article <CroIo3.DG6@rahul.net>, Mike Lyon <mlyon@rahul.net> wrote:

Mike,

Building an L band oscillator using an LC network is not an approach you should take. There are various schemes for generating RF at these frequencies. One, tried and true approach is to design an oscillator at a lower frequency (let's say a 5th overtone at 100 MHz). After the oscillator, you would place a set of multipliers. These mults. could be BJT transistor type of X2 or X3, or the mult. could be an SRD type and you can filter the frequency you desire. These are standar techniques which have been used by me and others. In fact the beacon transmitter on the Telstar 4 spacecraft is designed in this way. (I had a hand in the box in a previous life).

A second approach would be to use a Dielectric Resonator Oscillator right at L band . Check Microwave Engineering by Pozar for design equation. This approach will require some good microstrip skills and access to a microwave board layour program.

If you have other questions I will try and help.

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John J. Ernandez
Communication Systems Engineer
Public Broadcasting Service

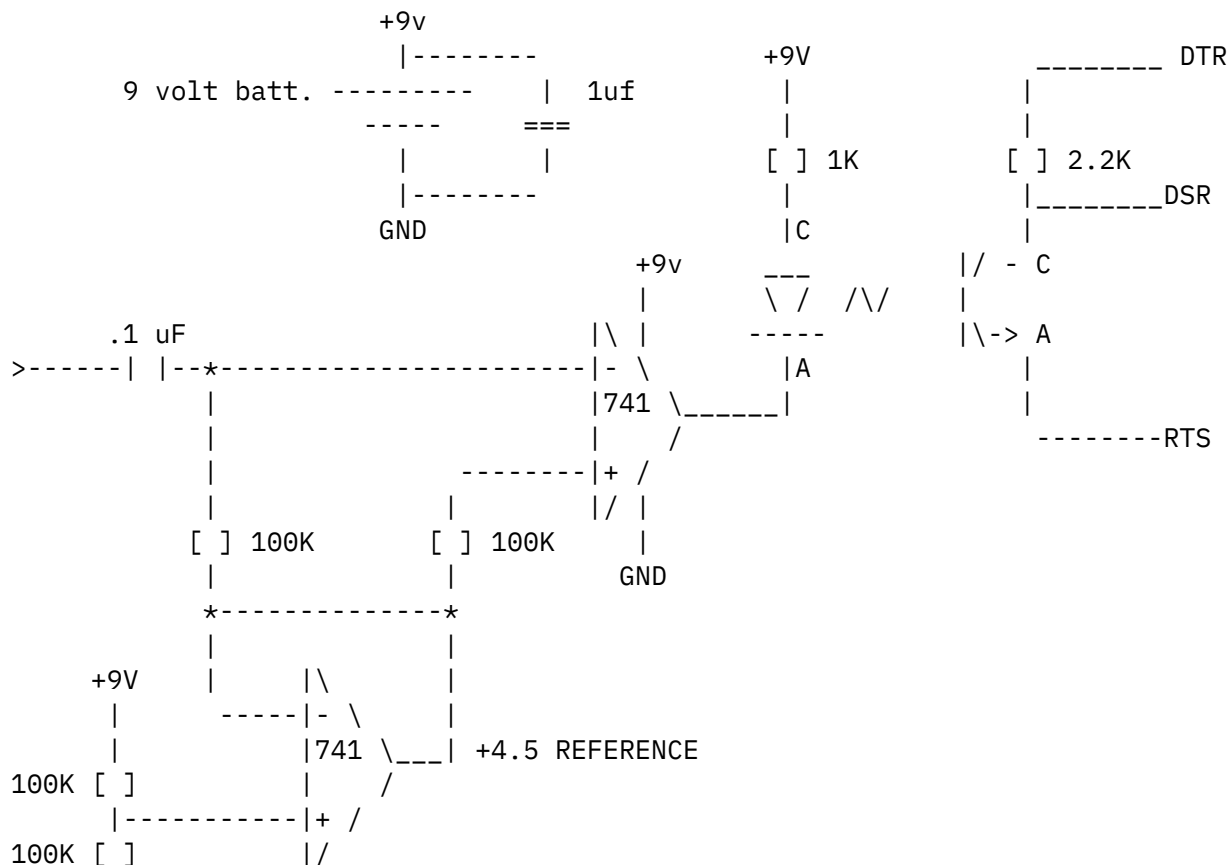
E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
Phone: 703-739-5474 Southern Railway Historical Association
Amateur Radio: KA2YAP

Date: Thu, 23 Jun 1994 15:09:39 GMT
From: ihnp4.ucsd.edu!swrinde!howland.reston.ans.net!news.cac.psu.edu!
news.pop.psu.edu!psuvax1!news.ecn.bgu.edu!feenix.metronet.com!
copeland@network.ucsd.edu
Subject: new HAMCOM interface with optical isolation
To: ham-homebrew@ucsd.edu

Here are two opto circuit I've been playing with for HAMCOM/JVFX. They virtually eliminate all computer induced rfi. I've been using a five foot serial cable and twenty foot audio cable with this circuit and the results are truly remarkable with JVFX.

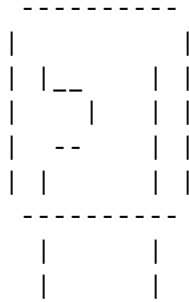
I've used the first circuit successfully, but recommend using the second. The first can be built with common Radio Shack parts. The second requires a little more uncommon LM358 and TIL181. The Radio Shack opto RECEIVER is only rated at 20v but used at 24v and could eventually burn out. It also may introduced problems since the +9v is not regulated and induces error into the reference op amp output ... even though it seems to work well.

Perhaps some engineers out there may have some advice.

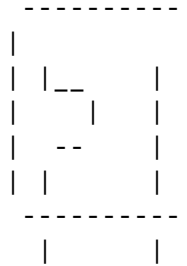


|
|
GND

INFARED EMITTER
(clear)



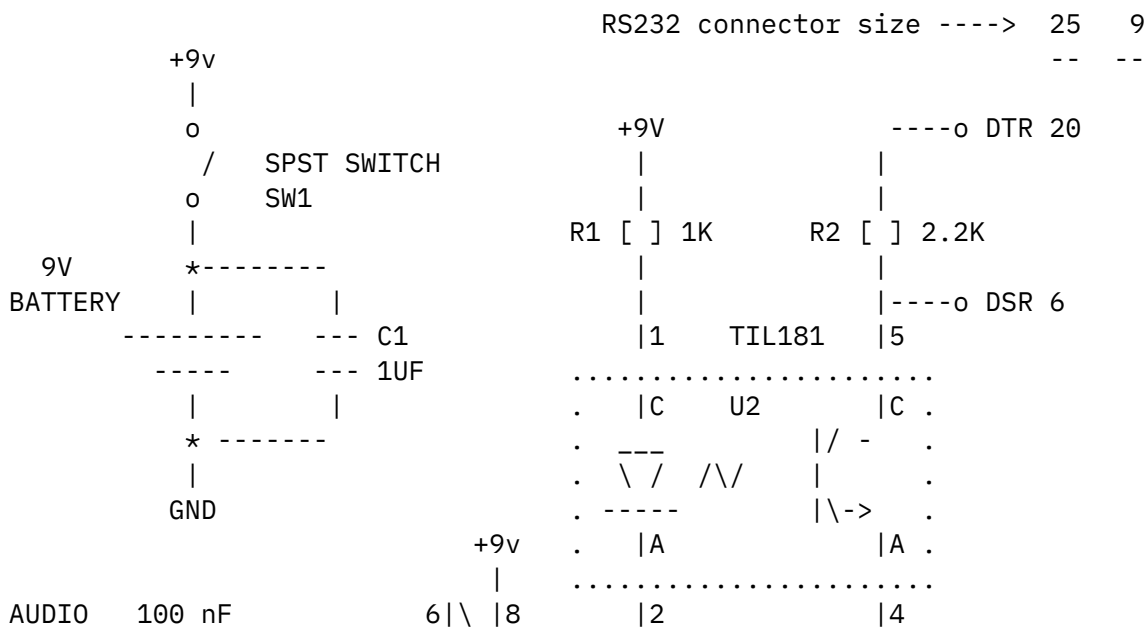
INFARED DETECTOR
(dark)

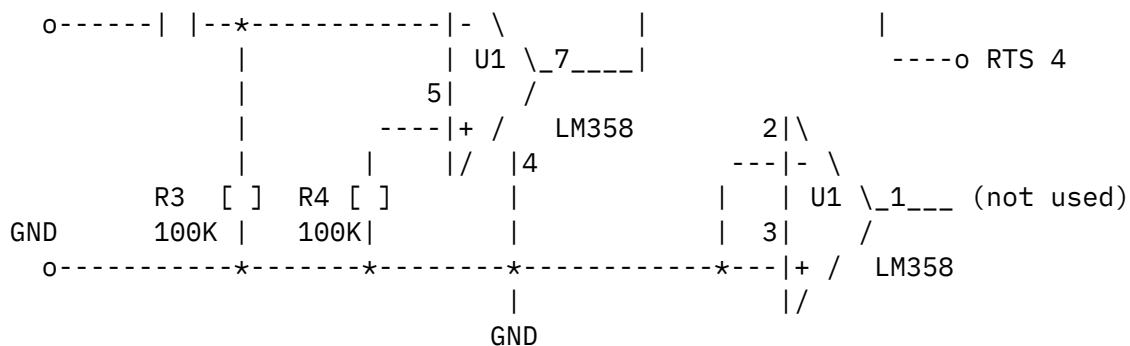


These are available at Radio Shack as a pair for \$1.99 (#276-142).
This shows which is the Anode and which is the Cathode, not clear on the package.

The LED and DETECTOR must be positioned right up against each other and exactly aligned to get maximum light transfer. The sides with the little lense like dots must be placed together.

I'd recommend this second circuit for more stability and possibly accuracy.





== ** NOTE ** ==

After constructing, measure LM358 pin 7 with no audio on the input. It should be high (~8v), if it is low (~0v) it will drain the battery in only 20 hours or less.

To correct this: Disconnect R1 from +9v and reconnect to U1 pin 7.
Disconnect U1 pin 2 and reconnect to GND.

The LM358 is a single supply opamp and can be substituted with the LM2904, LM158, or LM258. (The dual supply 741 can not be used as a substitute.)

The opto isolator IC can be substituted for many other types. The 4N35 has been tested successfully. The discrete infrared emitter/detector from Radio Shack has been tested successfully.

I tried to use a darlington opto (TIL113), but couldn't get it to work. A darlington opto circuit would only require 1.5ma average. That would make battery life about 133 hours. Maybe I'll try again later.

== MORE NOTES: ==

The 9v battery could be substituted with a 9 or 12 vdc adapter. However I've found the clearest pictures occur when both the radio and HAMCOM are running off batteries ... at 6am 8).

A 9v battery should last about 50 hours while audio is present (assuming 200ma hours for a battery). If no audio is present the battery will last 400 hours.

The battery life could be a problem for people who leave HAMCOM running all night using the timed FAX option. Battery would only last a week.

If you have any advice or knowledge that could improve this, please let

me know.

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End of Ham-Homebrew Digest V94 #172
